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10/587,605

07/27/2006

Kenji Nishi

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EXAMINER

RAINEY, ROBERT R

ART UNIT

PAPER NUMBER

2629

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/587,605 | Applicant(s) NISHI, KENJI | |
| | Examiner ROBERT R. RAINEY | Art Unit 2629 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) 9-79 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/27/06, 9/15/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group 1, claims 1-8, in the reply filed on 8/25/2008 is acknowledged.
2. Claims 9-79 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8/25/2008.

Claim Objections

3. Claim 6 objected to because of the following informalities: claim 6 recites "comprises a face fixing member" but later refers to "said face fixing memberss" as does claim 7. It seems to examiner that "comprises face fixing members" was intended. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. **Claims 1-4, 7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application Publication No. 06-195440 to *Takumi* ("*Takumi*").

As to **claim 1**, *Takumi* discloses an image display device comprising: a display portion (see for example Fig. 8) that projects, via eyepiece optical systems which respectively correspond to each of the both eyes of a user light from some type of light emitting device (see for example Fig. 8, which shows two eyepiece openings and the English language abstract, which describes the generated image as "stereoscopic"); a supporting portion (see for example Fig. 1 support arm with item number 1) that supports said display portion at its portion that is not in contact with said user (see for example Fig. 11); and a face contact portion (see for example Fig. 9) that is supported by said display portion (see for example Fig. 9 item 4, which provides for attachment between the face contact and display portions and thus support of the face contact portion by the display portion), is provided in contact with the face sides of said user (see for example Fig. 9, which shows an apparatus that provides for such contact at least around the ears of the user), sandwiches the face of said user (see for example Fig. 9, which shows earpieces contacting the user on both sides of his face, that is to say sandwiching the face), and is capable of changing the distance between said eyepiece optical systems and the eyes of said user (see for example Fig. 9, which shows the forehead strap with excess length passing through slots in the ear-piece strap to allow for adjustment; this would allow the user to adjust the distance between the eyepiece optical systems and his eyes according to his desire).

Takumi does not expressly disclose a light emitted from a two-dimensionally light emitting type photoelectric device which is perpendicular to the light beam emitting direction onto the eyeballs of said user.

Examiner takes official notice that the use of a light emitted from a two-dimensionally light emitting type photoelectric device which is perpendicular to the light beam emitting direction onto the eyeballs of a user was well known to those skilled in the art at the time of the invention. LCDs and CRTs were well known and are such two-dimensionally light emitting type photoelectric devices. Arranging such devices to be perpendicular to the eyes of the user was also well known. It would have been obvious to one skill in the art at the time of the invention was made to used such devices and found such an arrangement to be advantageous since deviations from perpendicularity caused increasing difficulty in viewing until at large deviation the image could no longer be seen at all.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a two-dimensionally light emitting type photoelectric device which is perpendicular to the light beam emitting direction onto the eyeballs of said user as the light emitting device. The suggestion/motivation would have been to use a known image producing means and to provide them in a position that they could be viewed.

As to **claim 2**, in addition to the rejection of claim 1 over *Takumi*, *Takumi* further discloses that said display portion is movable in accordance with the

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movement of the head of said user and with the distance between said eyepiece optical systems and the eyes of said user (see for example the English language abstract; note that while Takumi explicitly discloses movement of the display portion according to the relative positional relation of the display part with the head of the observer, the eyes of all users move in concert with their heads and the fact that the system is a display system and the position chosen to measure head position, just above the eyes rather than say at the chin, clearly imply that it is the position of the eyes that is being tracked by way of an indicator of their position, which is the position of the head just above the eyes), a portion of said face contact portion being a point of support (see for example Fig. 9, which shows at least ear portions that are points of support).

As to **claim 3**, in addition to the rejection of claim 1 over *Takumi*, *Takumi* further discloses that said face contact portion comes into contact with the face sides by sandwiching the both ears of said user (this was already covered in the rejection of claim 1), and wherein the portion sandwiching said both ears comprises a sound output mechanism (see for example Fig. 9, in particular the feature at the lower right indicative of a wire feeding the ear contact portion this and the configuration of the ear contact portions clearly suggests that the ear contact portion comprises a sound output mechanism).

As to **claim 4**, in addition to the rejection of claim 1 over *Takumi*, *Takumi* further discloses that said face contact portion comprises an elastic member for coming into contact with the face sides of said user (see for example Fig. 9, in which the shape of the ear contact portions clearly suggests that at least an elastic portion around each ear, that is a portion that can be deformed and then return to its original shape; the shape of the straps also suggests the ability of the face contact portion to elastically change the distance between the earpieces; furthermore headphones with such features were well known), and wherein said face contact portion comprises, independently of said elastic member, a width changing portion that changes the face sandwiching width (see for example Fig. 9, in which the strap over the top of the head shows an enlarged segment that implies this adjustment ability; again headphones with such features were well known) and a distance changing portion that changes the distance between said eyepiece optical systems and the eyes of said user (this was covered in the rejection of claim 1).

As to **claim 6**, in addition to the rejection of claim 1 over *Takumi*, *Takumi* further discloses that said display portion comprises a face fixing member in a portion that faces the front side of the face of said user (see for example the nose relief in Fig. 8 or interpreted as "face fixing members" also including the upper, lower and side features indicated by the double line that indicates the nose relief and continues on around the periphery of the device), and wherein said face

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contact portion can change its position to a distance where the front side of the face of said user is in contact with said face fixing member (this would be the condition when the forehead strap of Fig. 9 is adjusted to bring the user's face all the way toward the display portion) and to a distance where without the front side of the face of said user being in contact with said face fixing members (this would be the condition when the forehead strap of Fig. 9 is adjusted to move the user's face away from the display portion), the sight line of the both eyes of said user is, relative to said display portion, relatively movable around the axis passing through the both ears (with the user's face away from the display portion he would be able to nod his head thus causing the claimed relative motion).

As to **claim 7**, in addition to the rejection of claim 6 over *Takumi*, *Takumi* further discloses that said display portion comprises said face fixing members in a manner that they are discretely provided around and above and below said both eyes, (see for example the members above and below the eyepiece openings in Fig. 8) and wherein said display portion comprises light-shielding members for shielding light from the outside in the right-and-left outsides of said eyes (see for example the members extending to the left and right in Fig. 8).

Takumi may not explicitly disclose face fixing members designed to evade the eyeglass frame of a user.

Examiner takes official notice that eyeglasses were well known and that eyeglasses were necessary for many people in order to allow them to view

images clearly. Examiner personally wore them before the time of the invention for this purpose.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to design the face fixing features such that they would evade the eyeglass frame of a user. The suggestion/motivation would have been to provide advantages such as to expand the usability of the device to a known population.

As to **claim 8**, in addition to the rejection of claim 6 over *Takumi*, *Takumi* discloses the claimed invention but does not explicitly mention detection of eyeglasses frames. Since eyeglasses often have frame portions in the area just above the eyes, the position measurement system disclosed by *Takumi* would detect the frame and thus adjust the system to keep the display portion farther away from the user's eyes. Thus the thickness in the optical axis direction of said eyepiece optical systems, which includes the space between the eyes and any lenses or image screens, is changeable in accordance with the recognition results by said frame recognition portion and all claimed limitations are taught.

4. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application Publication No. 06-195440 to *Takumi* ("*Takumi*") in view of U.S. Patent Application Publication No. 2003/0122925 to *Yoon* ("*Yoon*").

As to **claim 5**, in addition to the rejection of claim 1 over *Takumi*:

Takumi does not expressly disclose that said display portion changes, in accordance with the distance between said eyepiece optical systems and the eyes of said user, the size of an image to be displayed.

Yoon discloses a stereoscopic, screen-per-eye, optical display system and in particular a display portion that changes, in accordance with the distance between display screens and the eyes of a user, the size of an image to be displayed (see for example Fig. 8, especially "IMAGE SIZE ADJUSTING PORTION" and [0157]-[0158]) and goes on to disclose a system in which this distance would include the distance from an eyepiece optical system to the viewer's eyes (see for example Fig. 13A, in which the eyepiece optical system comprises the holes 1320 and 1340).

Takumi and *Yoon* are analogous art because they are from the same field of endeavor, which is screen-per-eye optical display systems.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to improve the system of *Takumi* by including the image size adjustment mechanism of *Yoon* such that the size of the image displayed changes according to eye to eyepiece optical system distance. The suggestion/motivation would have been to provide advantages such as to cause the user to perceive the image at the appropriate size (see for example *Yoon* [0160]).

Conclusion

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5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application Publication No. 2002/0180733 to Colmenarez et al. teaches automatic determination of distance to the viewer's eye and scaling of image size according to the distance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT R. RAINEY whose telephone number is (571)270-3313. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RR/

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629